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=> file biosis caplus
COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
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FILE 'CAPLUS' ENTERED AT 15:12:15 ON 23 MAR 2004
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=> s rotating (w) cell (w) culture
L1          12 ROTATING (W) CELL (W) CULTURE

=> s l1 and protein?
L2           7 L1 AND PROTEIN?

=> s l2 and pp14
L3           0 L2 AND PP14

=> d l2 bib ab 1-7

L2   ANSWER 1 OF 7  BIOSIS  COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN   2002:550835  BIOSIS
DN   PREV200200550835
TI   Vector-averaged gravity-induced changes in cell signaling and vitamin D
     receptor activity in MG-63 cells are reversed by a 1,25-(OH)2D3 analog,
     EB1089.
AU   Narayanan, R.; Smith, C. L.; Weigel, N. L. [Reprint author]
CS   Department of Molecular and Cellular Biology, Baylor College of Medicine,
     Houston, TX, 77030, USA
     nweigel@bcm.tmc.edu
SO   Bone (New York), (September, 2002) Vol. 31, No. 3, pp. 381-388. print.
     CODEN: BONEDL. ISSN: 8756-3282.
DT   Article
LA   English
ED   Entered STN: 23 Oct 2002
     Last Updated on STN: 23 Oct 2002
AB   Skeletal unloading in an animal hindlimb suspension model and microgravity
     experienced by astronauts or as a result of prolonged bed rest causes
     site-specific losses in bone mineral density of 1%-2% per month. This is
     accompanied by reductions in circulating levels of 1,25-(OH)2D3, the
     active metabolite of vitamin D. 1,25-(OH)2D3, the ligand for the vitamin D
     receptor (VDR), is important for calcium absorption and plays a role in
     differentiation of osteoblasts and osteoclasts. To examine the responses
     of cells to activators of the VDR in a simulated microgravity environment,
     we used slow-turning lateral vessels (STLVs) in a   ***rotating***
       ***cell***     ***culture***   system. We found that, similar to cells
     grown in microgravity, MG-63 cells grown in the STLVs produce less
     osteocalcin, alkaline phosphatase, and collagen Ialphal mRNA and are less
     responsive to 1,25-(OH)2D3. In addition, expression of VDR was reduced.
     Moreover, growth in the STLV caused activation of the stress-activated
       ***protein***   kinase pathway (SAPK), a kinase that inhibits VDR
     activity. In contrast, the 1,25-(OH)2D3 analog, EB1089, was able to
     compensate for some of the STLV-associated responses by reducing SAPK
     activity, elevating VDR levels, and increasing expression of osteocalcin
     and alkaline phosphatase. These studies suggest that, not only does
     simulated microgravity reduce differentiation of MG-63 cells, but the
     activity of the VDR, an important regulator of bone metabolism, is
     reduced. Use of potent, less calcemic analogs of 1,25-(OH)2D3 may aid in
     overcoming this defect.

L2   ANSWER 2 OF 7  BIOSIS  COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN   2001:319071  BIOSIS
DN   PREV200100319071
TI   Effects of chronic exposure to simulated microgravity on skeletal muscle
     cell proliferation and differentiation.
AU   Slentz, Dorothy H.; Truskey, George A.; Kraus, William E. [Reprint author]
CS   Duke University Medical Center, Durham, NC, 27710, USA
     william.kraus@duke.edu
SO   In Vitro Cellular and Developmental Biology Animal, (March, 2001) Vol. 37,
     No. 3, pp. 148-156. print.
     ISSN: 1071-2690.
DT   Article
LA   English
ED   Entered STN: 4 Jul 2001
     Last Updated on STN: 19 Feb 2002
AB   Cell culture models that mimic long-term exposure to microgravity provide
     important insights into the cellular biological adaptations of human
     skeletal muscle to long-term residence in space. We developed insert
     scaffolding for the NASA-designed   ***rotating***     ***cell***
       ***culture***   system (RCCS) in order to study the effects of
     time-averaged microgravity on the proliferation and differentiation of
     anchorage-dependent skeletal muscle myocytes. We hypothesized that
     prolonged microgravity exposure would result in the retardation of myocyte
     differentiation. Microgravity exposure in the RCCS resulted in increased
     cellular proliferation. Despite shifting to media conditions promoting
     cellular differentiation, 5 d later, there was an increase in cell number
     of approximately 62%, increases in total cellular   ***protein***   (52%),
     and cellular proliferating cell nuclear antigen (PCNA) content (2.7 times
     control), and only a modest (insignificant) decrease (10%) in sarcomeric
     myosin   ***protein***   expression. We grew cells in an inverted
     orientation on membrane inserts. Changes in cell number and PCNA content
     were the converse to those observed for cells in the RCCS. We also grew
     cells on inserts at unit gravity with constant mixing. Mixing accounted
     for part, but not all, of the effects of microgravity exposure on skeletal
     muscle cell cultures (53% of the RCCS effect on PCNA at 4-6 d). In
     summary, the mechanical effects of simulated microgravity exposure in the
     RCCS resulted in the maintenance of cellular proliferation, manifested as
     increases in cell number and expression of PCNA relative to control
     conditions, with only a modest reciprocal inhibition of cellular
     differentiation. Therefore, this model provides conditions wherein
     cellular differentiation and proliferation appear to be uncoupled.

L2   ANSWER 3 OF 7  BIOSIS  COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN   2001:283644  BIOSIS
DN   PREV200100283644
TI   Modeled microgravity inhibits apoptosis in peripheral blood lymphocytes.
AU   Risin, Diana [Reprint author]; Pellis, Neal R.
```

CS NASA-Johnson Space Center, 2101 NASA Road 1, Houston, TX, 77058, USA
drisin@ems.jsc.nasa.gov
SO In Vitro Cellular and Developmental Biology Animal, (February, 2001) Vol. 37, No. 2, pp. 66-72. print.
ISSN: 1071-2690.
DT Article
LA English
ED Entered STN: 13 Jun 2001
Last Updated on STN: 19 Feb 2002
AB Microgravity interferes with numerous lymphocyte functions (expression of cell surface molecules, locomotion, polyclonal and antigen-specific activation, and the ***protein*** kinase C activity in signal transduction). The latter suggests that gravity may also affect programmed cell death (PCD) in lymphocyte populations. To test this hypothesis, we investigated spontaneous, activation- and radiation-induced PCD in peripheral blood mononuclear cells exposed to modeled microgravity (MMG) using a ***rotating*** ***cell*** ***culture*** system. The results showed significant inhibition of radiation- and activation-induced apoptosis in MMG and provide insights into the potential mechanisms of this phenomenon.

L2 ANSWER 4 OF 7 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN 2001:44046 BIOSIS
DN PREV200100044046
TI Differentiation of mammalian skeletal muscle cells cultured on microcarrier beads in a ***rotating*** ***cell*** ***culture*** system.
AU Torgan, C. E.; Burge, S. S.; Collinsworth, A. M.; Truskey, G. A.; Kraus, W. E. [Reprint author]
CS Departments of Medicine and Cell Biology, Duke University Medical Center, Durham, NC, USA
william.kraus@duke.edu
SO Medical and Biological Engineering and Computing, (September, 2000) Vol. 38, No. 5, pp. 583-590. print.
CODEN: MBECDY. ISSN: 0140-0118.
DT Article
LA English
ED Entered STN: 17 Jan 2001
Last Updated on STN: 12 Feb 2002
AB The growth and repair of adult skeletal muscle are due in part to activation of muscle precursor cells, commonly known as satellite cells or myoblasts. These cells are responsive to a variety of environmental cues, including mechanical stimuli. The overall goal of the research is to examine the role of mechanical signalling mechanisms in muscle growth and plasticity through utilisation of cell culture systems where other potential signalling pathways (i.e. chemical and electrical stimuli) are controlled. To explore the effects of decreased mechanical loading on muscle differentiation, mammalian myoblasts are cultured in a bioreactor (***rotating*** ***cell*** ***culture*** system), a model that has been utilised to simulate microgravity. C2C12 murine myoblasts are cultured on microcarrier beads in a bioreactor and followed throughout differentiation as they form a network of multinucleated myotubes. In comparison with three-dimensional control cultures that consist of myoblasts cultured on microcarrier beads in teflon bags, myoblasts cultured in the bioreactor exhibit an attenuation in differentiation. This is demonstrated by reduced immunohistochemical staining for myogenin and alpha-actinin. Western analysis shows a decrease, in bioreactor cultures compared with control cultures, in levels of the contractile ***proteins*** myosin (47% decrease, p<0.01) and tropomyosin (63% decrease, p<0.01). Hydrodynamic measurements indicate that the decrease in differentiation may be due, at least in part, to fluid stresses acting on the myotubes. In addition, constraints on aggregate size imposed by the action of fluid forces in the bioreactor affect differentiation. These results may have implications for muscle growth and repair during spaceflight.

L2 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:684774 CAPLUS
DN 138:67022
TI Vector-averaged gravity-induced changes in cell signaling and vitamin D receptor activity in MG-63 cells are reversed by a 1,25-(OH)2D3 analog, EB1089
AU Narayanan, R.; Smith, C. L.; Weigel, N. L.
CS Department of Molecular and Cellular Biology, Baylor College of Medicine, Houston, TX, USA
SO Bone (New York, NY, United States) (2002), 31(3), 381-388
CODEN: BONEDL; ISSN: 8756-3282
PB Elsevier Science Inc.
DT Journal
LA English
AB Skeletal unloading in an animal hindlimb suspension model and microgravity experienced by astronauts or as a result of prolonged bed rest causes site-specific losses in bone mineral d. of 1%-2% per mo. This is accompanied by redns. in circulating levels of 1,25-(OH)2D3, the active metabolite of vitamin D. 1,25-(OH)2D3, the ligand for the vitamin D receptor (VDR), is important for calcium absorption and plays a role in differentiation of osteoblasts and osteoclasts. To examine the responses of cells to activators of the VDR in a simulated microgravity environment, the authors used slow-turning lateral vessels (STLVs) in a ***rotating*** ***cell*** ***culture*** system. The authors found that, similar to cells grown in microgravity, MG-63 cells grown in the STLVs produce less osteocalcin, alk. phosphatase, and collagen I.alpha.1 mRNA and are less responsive to 1,25-(OH)2D3. In addn., expression of VDR was reduced. Moreover, growth in the STLV caused activation of the stress-activated ***protein*** kinase pathway (SAPK), a kinase that inhibits VDR activity. In contrast, the 1,25-(OH)2D3 analog, EB1089, was able to compensate for some of the STLV-assocd. responses by reducing SAPK activity, elevating VDR levels, and increasing expression of osteocalcin and alk. phosphatase. These studies suggest that, not only does simulated microgravity reduce differentiation of MG-63 cells, but the activity of the VDR, an important regulator of bone metab., is reduced. Use of potent, less calcemic analogs of 1,25-(OH)2D3 may aid in overcoming this defect.
RE.CNT 50 THERE ARE 50 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:424508 CAPLUS
DN 135:44163
TI Effects of chronic exposure to simulated microgravity on skeletal muscle cell proliferation and differentiation
AU Slentz, Dorothy H.; Truskey, George A.; Kraus, William E.
CS Department of Medicine, Duke University, Durham, NC, 27710, USA
SO In Vitro Cellular & Developmental Biology: Animal (2001), 37(3), 148-156

CODEN: IVCAED; ISSN: 1071-2690
PB Society for In Vitro Biology
DT Journal
LA English
AB Cell culture models that mimic long-term exposure to microgravity provide important insights into the cellular biol. adaptations of human skeletal muscle to long-term residence in space. Here, the authors developed insert scaffolding for the NASA-designed ***rotating*** ***cell*** ***culture*** system (RCCS) in order to study the effects of time-averaged microgravity on the proliferation and differentiation of anchorage-dependent skeletal muscle myocytes. The authors hypothesized that prolonged microgravity exposure would result in the retardation of myocyte differentiation. Microgravity exposure in the RCCS resulted in increased cellular proliferation. Despite shifting to media conditions promoting cellular differentiation, 5 days later, there was an increase in cell no. of .apprx.62%, increases in total cellular ***protein*** (52%), and cellular proliferating cell nuclear antigen (PCNA) content (2.7 times control), and only a modest (insignificant) decrease (10%) in sarcomeric myosin ***protein*** expression. The authors grew cells in an inverted orientation on membrane inserts. Changes in cell no. and PCNA content were the converse to those obsd. for cells in the RCCS. The authors also grew cells on inserts at unit gravity with const. mixing. Mixing accounted for part, but not all, of the effects of microgravity exposure on skeletal muscle cell cultures (53% of the RCCS effect on PCNA at 4-6 days). In summary, the mech. effects of simulated microgravity exposure in the RCCS resulted in the maintenance of cellular proliferation, manifested as increases in cell no. and expression of PCNA relative to control conditions, with only a modest reciprocal inhibition of cellular differentiation. Therefore, this model provides conditions wherein cellular differentiation and proliferation appear to be uncoupled.
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:335894 CAPLUS
DN 135:59044
TI Modeled microgravity inhibits apoptosis in peripheral blood lymphocytes
AU Risin, Diana; Pellis, Neal R.
CS Biotechnology Program, Wyle Laboratories-Life Sciences, Systems and Services, Houston, TX, 77058, USA
SO In Vitro Cellular & Developmental Biology: Animal (2001), 37(2), 66-72
CODEN: IVCAED; ISSN: 1071-2690
PB Society for In Vitro Biology
DT Journal
LA English
AB Microgravity interferes with numerous lymphocyte functions (expression of cell surface mols., locomotion, polyclonal and antigen-specific activation, and the ***protein*** kinase C activity in signal transduction). The latter suggests that gravity may also affect programmed cell death (PCD) in lymphocyte populations. To test this hypothesis, we investigated spontaneous, activation- and radiation-induced PCD in peripheral blood mononuclear cells exposed to modeled microgravity (MMG) using a ***rotating*** ***cell*** ***culture*** system. The results showed significant inhibition of radiation- and activation-induced apoptosis in MMG and provide insights into the potential mechanisms of this phenomenon.
RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> d his

     (FILE 'HOME' ENTERED AT 15:12:04 ON 23 MAR 2004)

     FILE 'BIOSIS, CAPLUS' ENTERED AT 15:12:15 ON 23 MAR 2004
L1           12 S ROTATING (W) CELL (W) CULTURE
L2            7 S L1 AND PROTEIN?
L3            0 S L2 AND PP14

=> log h
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY    SESSION
FULL ESTIMATED COST                                   26.39      26.60

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                      ENTRY    SESSION
CA SUBSCRIBER PRICE                                   -2.08      -2.08

 SESSION WILL BE HELD FOR 60 MINUTES
STN INTERNATIONAL SESSION SUSPENDED AT 15:13:50 ON 23 MAR 2004

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SESSION RESUMED IN FILE 'BIOSIS, CAPLUS' AT 15:18:09 ON 23 MAR 2004
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COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY    SESSION
FULL ESTIMATED COST                                   26.39      26.60

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                      ENTRY    SESSION
CA SUBSCRIBER PRICE                                   -2.08      -2.08

=> s express? (10a) protein
L4       303252 EXPRESS? (10A) PROTEIN

=> s (micro or low or reduce?) (w) gravity
L5         1809 (MICRO OR LOW OR REDUCE?) (W) GRAVITY

=> s l4 and l5
L6            1 L4 AND L5

=> d l6 bib ab

L6   ANSWER 1 OF 1  BIOSIS  COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN   2001:565114  BIOSIS
DN   PREV200100565114
TI   A unique in vitro model of xenogeneic heart transplantation using a
       ***micro*** - ***gravity*** based CO-culture system: Heat shock
       ***protein*** -60 ***expression*** and apoptosis.
AU   Tran, J.-L. [Reprint author]; Schuster, K. [Reprint author]; Strande, L.
```

[Reprint author]; Sheng, X. [Reprint author]; Eydelman, R. [Reprint author]; Perlman, N. [Reprint author]; Goldenberg, M. [Reprint author]; Marra, S. [Reprint author]; DelRossi, A. [Reprint author]; Hewitt, C. [Reprint author]
CS UMDNJ-Robert Wood Johnson Medical School at Camden, Camden, USA
SO Xenotransplantation, (August, 2001) Vol. 8, No. Supplement 1, pp. 68. print.
Meeting Info.: VI Congress of the International Xenotransplantation Association. Chicago, Illinois, USA. September 29-October 03, 2001.
ISSN: 0908-665X.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LA English
ED Entered STN: 5 Dec 2001
Last Updated on STN: 25 Feb 2002

=> d his

(FILE 'HOME' ENTERED AT 15:12:04 ON 23 MAR 2004)

FILE 'BIOSIS, CAPLUS' ENTERED AT 15:12:15 ON 23 MAR 2004
L1 12 S ROTATING (W) CELL (W) CULTURE
L2 7 S L1 AND PROTEIN?
L3 0 S L2 AND PP14
L4 303252 S EXPRESS? (10A) PROTEIN
L5 1809 S (MICRO OR LOW OR REDUCE?) (W) GRAVITY
L6 1 S L4 AND L5

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	40.28	40.49
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-2.08	-2.08

STN INTERNATIONAL LOGOFF AT 15:19:53 ON 23 MAR 2004

FILE 'HOME' ENTERED AT 12:35:20 ON 24 MAR 2004

=> file biosis

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'BIOSIS' ENTERED AT 12:35:33 ON 24 MAR 2004
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FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 17 March 2004 (20040317/ED)

FILE RELOADED: 19 October 2003.

=> s (mammal? (3a) express? (3a) system?) and review
9498485 MAMMAL?
1002950 EXPRESS?
8659759 SYSTEM?
548 MAMMAL? (3A) EXPRESS? (3A) SYSTEM?
321082 REVIEW
L1 20 (MAMMAL? (3A) EXPRESS? (3A) SYSTEM?) AND REVIEW

=> s l1 and leukemia
167081 LEUKEMIA
L2 0 L1 AND LEUKEMIA

=> s l1 and pp14
182 PP14
L3 0 L1 AND PP14

=> dup rem l1
PROCESSING COMPLETED FOR L1
L4 20 DUP REM L1 (0 DUPLICATES REMOVED)

=> d l4 1-20 kwic

L4 ANSWER 1 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB There are many different calcium channels ***expressed*** in the ***mammalian*** nervous ***system*** , but N-type and P/Q-type calcium channels appear to dominate the presynaptic terminals of central and peripheral neurons. The neurotransmitter-induced modulation of these channels can result in alteration of synaptic transmission. This ***review*** highlights the mechanisms by which neurotransmitters affect
the activity of N-type and P/Q-type calcium channels. The inhibition of these channels. . .

L4 ANSWER 2 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Polyunsaturated fatty acids and gene ***expression*** in ***mammalian*** ***systems*** .
AB. . . negatively. Such nutrient-gene interactions have important effects on cell metabolism, differentiation and growth, and ultimately on disease processes. The present ***review*** describes some of the more important fatty acid-gene interactions in relation to health and disease in mammalian species, and focuses. . . signal mechanisms, including various transcription factors, affected by fatty acids and some of their oxygenated derivatives, e.g. the eicosanoids. The ***review*** also attempts to clarify some of the complexities of the effects of fatty acids by suggesting a possible overriding regulation. . .

L4 ANSWER 3 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB. . . and behave as an independent functional unit after integration into the genome or when retained as an episome. In this ***review*** we will first discuss the chromosomal elements, such as enhancers, locus control regions, boundary elements, insulators and scaffold- or matrix-attachment. . . then discuss recent progress in the use of mammalian artificial chromosomes and small circular non-viral vectors for their use as ***expression*** ***systems*** in ***mammalian***

cells.

L4 ANSWER 4 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB . . activated or inhibited by distinct classes of receptors (Galphai/o and Galphaq/11-coupled, respectively), providing dynamic regulation of neuronal excitability. In this mini- ***review*** , we highlight findings from our laboratory in which we used a ***mammalian*** heterologous ***expression*** ***system*** to address mechanisms of GIRK channel regulation by Galpha and Gbetagamma subunits. We found that, like beta1- and beta2-containing Gbetagamma. . .

L4 ANSWER 5 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB Recombinant allergenic proteins have been produced in a variety of different expression systems. This ***review*** gives examples of and compares prokaryotic expression systems, such as Escherichia coli, and eukaryotic systems including the yeasts, Saccharomyces cerevisiae. . .
IT Major Concepts
Biochemistry and Molecular Biophysics
IT Parts, Structures, & Systems of Organisms
insect cell, expression system; ***mammalian*** cell, ***expression*** ***system*** ; plant system, expression system
IT Chemicals & Biochemicals
recombinant allergenic proteins: allergen, toxin

L4 ANSWER 6 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB. . . safety. Advances in biotechnology allowed production of rFVIII at industrial scale, which significantly improved treatment of hemophilia A patients. We ***review*** the contemporary methods used for FVIII ***expression*** in ***mammalian*** cell culture ***systems*** and discuss the factors responsible for insufficient recoveries of rFVIII, such as inefficient accumulation of FVIII mRNA in the cell,. . .

L4 ANSWER 7 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB Neuropeptide Y (NPY), a peptide abundantly ***expressed*** in the ***mammalian*** nervous ***system*** , has been extensively studied using traditional pharmacological and behavioral models. Central administration of NPY or synthetic ligands for its receptors. . . have been generated. In addition, both mice and rats overexpressing NPY in the central nervous system are available. Here, we ***review*** the research carried out so far in the NPY-field using genetically modified animals. Together, these models indicate that stress-related behaviors. . .

L4 ANSWER 8 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB. . . the realization that proteins made in different hosts are different in many ways, particularly in their post-translation modifications. In this ***review*** a variety of available expression host systems are evaluated for heterologous production of proteins. Factors affecting the stability and expression. . . of producing a desired protein in an economical heterologous host is influenced by a variety of factors discussed in this ***review*** . Subsequent to the production, stabilization and formulation of proteins will pose significant hurdles in utilizing the natural biological catalysts and. . .
ORGN . . .
insect: expression system
Taxa Notes
Animals, Arthropods, Insects, Invertebrates
ORGN Classifier
Mammalia 85700
Super Taxa
Vertebrata; Chordata; Animalia
Organism Name
mammal : ***expression*** ***system***
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates
ORGN Classifier
Myxophyta 15700
Super Taxa
Fungi; Plantae
Organism Name

L4 ANSWER 9 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB. . . is their ability to make authentic proteins containing post-translational modifications similar to those of the native protein. The development of ***expression*** ***systems*** for ***mammalian*** cells has been ongoing for several years, resulting in a wide variety of effective expression vectors. The aim of this ***review*** is to highlight episomal expression vectors. Such episomal plasmids are usually based on sequences from DNA viruses, such as BK virus, bovine papilloma virus 1 and Epstein-Barr virus. In this ***review*** we will mainly focus on the improvements made towards the usefulness of these systems for gene expression studies and gene. . .

L4 ANSWER 10 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB. . . relevant to gene function based on phenotypes arising from increased gene dosage or expression of activating and dominant-negative alleles. This ***review*** will concentrate on these issues and their relevance to the analysis of CNS-expressed genes.
IT Miscellaneous Descriptors
increased gene dosage phenotype; ***mammalian*** nervous ***system*** gene ***expression*** ; mammalian nervous system gene
function; neuronal projection patterns; subcellular localization

L4 ANSWER 11 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB. . . drive the expression of therapeutic genes in latently infected neurons of both the peripheral and central nervous systems. In this ***review*** we describe a strategy which allows the latency-associated promoter to drive long-term reporter gene ***expression*** in the ***mammalian*** nervous ***system*** . These observations open up the possibility of using similar HSV-based vectors to express therapeutic transgenes within the brain and investigate. . .

L4 ANSWER 12 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB Highly efficient methods are required to analyze recombinant proteins for clinical use. These proteins generally produced from ***mammalian*** ***expression*** ***systems*** are highly glycosylated and consist of a population of glycosylated variants (glycoforms). This ***review*** presents the different microscale techniques of capillary electrophoresis (CE) for analyzing the intact recombinant glycoproteins and for monitoring their bioproduction.. . .

L4 ANSWER 13 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB During the last few years, antisense oligodeoxyribonucleotides (asODN) have become a commonly used tool for blocking of gene ***expression*** in the ***mammalian*** central nervous ***system*** . Successful gene inhibition has been reported for such diverse targets as those encoding neurotransmitter receptors, neuropeptides, trophic factors, transcription factors, cytokines, transporters, ion channels, and others. This ***review*** presents a discussion of recent studies on ODN in the brain, with a focus on specific approaches taken by the. . .

L4 ANSWER 14 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB. . . fish has been frequently reviewed, but the metabolic consequences of these hormones have received less attention. The purpose of this ***review*** is to examine the recent literature dealing with CA actions on whole fish and tissue metabolism. The CA increase glucose. . . especially the hepatocyte. Catecholamines stimulate both glycogenolysis and gluconeogenesis in hepatocytes isolated from a large number of fish species. This ***review*** examines the steps involved in the signal transduction system, from the binding of CA to alpha- and beta-adrenoceptors to the ultimate effects of specific enzyme phosphorylation. Recent literature demonstrates that the complexity of the adrenoceptor ***system*** noted for ***mammals*** , also is ***expressed*** in fish. Adrenoceptor subtypes are specific to species, to tissues and to function of the tissues, and these issues are. . .

L4 ANSWER 15 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Antibody engineering: Comparison of bacterial, yeast, insect and ***mammalian*** ***expression*** ***systems*** .
AB. . . that can limit the applicability of this technology is the ability to express large amounts of active protein. In this ***review*** we describe the relative advantages and disadvantages of bacterial, yeast, insect and ***mammalian*** ***expression*** ***systems*** , and discuss some of the problems that can be encountered when using them. There is no 'universal' expression system, that. . .
ORGN . . .
insect: expression system
Taxa Notes
Animals, Arthropods, Insects, Invertebrates
ORGN Classifier
Mammalia 85700
Super Taxa
Vertebrata; Chordata; Animalia
Organism Name
mammal : ***expression*** ***system***
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates

L4 ANSWER 16 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB. . . Nucleoside transporters play a critical role in the absorption, disposition, and targeting of therapeutically used nucleosides and nucleoside analogs. This ***review*** is focused on the Na+-dependent, concentrative nucleoside transporters which are found in a variety of cells including renal, intestinal and. . . transporters has provided the first information on the molecular function and structure of concentrative nucleoside transporters. In this manuscript we ***review*** the characteristics of the various subtypes of nucleoside transporters and the molecular structure, functional properties, and tissue distribution of the cloned Na+dependent nucleoside transporters. In addition, the interactions of nucleosides and nucleoside analogs with the cloned transporters in ***mammalian*** and amphibian ***expression*** ***systems*** are presented. ***Mammalian*** ***expression*** ***systems*** may be particularly useful during drug development in screening potential compounds for improved bioavailability and tissue specific targeting. Finally, we. . .

L4 ANSWER 17 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI RECOMBINANT GRANULOCYTE-MACROPHAGE COLONY-STIMULATING FACTOR RGM-CSF A ***REVIEW*** OF ITS PHARMACOLOGICAL PROPERTIES AND PROSPECTIVE ROLE IN THE MANAGEMENT OF MYELOSUPPRESSION.
AB Recombinant granulocyte-macrophage colony-stimulating factor (rGM-CSF) is a polypeptide hormone produced through recombinant DNA technologies in glycosylated (yeast or ***mammalian*** ***expression*** ***systems***) or nonglycosylated (Escherichia coli expression system) form. It is a multilineage haematopoietin which stimulates proliferation and differentiation of bone marrow. . .
IT Miscellaneous Descriptors
REVIEW HUMAN HUMAN NEOPLASTIC CELLS HEMATOLOGIC-DRUG HEMATOPOIESIS BONE MARROW MYELOID PROGENITORS PERIPHERAL WHITE BLOOD CELLS PERIPHERAL NEUTROPHIL COUNT BONE MARROW TRANSPLANTATION. . .

L4 ANSWER 18 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB. . . for research, diagnostic or therapeutic applications. In response to this demand, research activity in downstream processing has increased. In this ***review*** some new and innovative methods for purification of recombinant proteins will be discussed.
IT Miscellaneous Descriptors
REVIEW ESCHERICHIA-COLI BACILLUS-SUBTILIS YEAST INSECT CELLS BACULOVIRUS ***MAMMALIAN*** CELL ***EXPRESSION*** ***SYSTEM*** RECOMBINANT PROTEINS VITAMINS ANTIBIOTIC SEPARATION RECOVERY PURIFICATION DIAGNOSTIC APPLICATIONS THERAPEUTIC APPLICATIONS SYNTHETIC METHOD PURIFICATION METHOD ANALYTICAL METHOD PRODUCTION COSTS

L4 ANSWER 19 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
IT Miscellaneous Descriptors
REVIEW ESCHERICHIA-COLI STAPHYLOCOCCUS-AUREUS ***MAMMALIAN*** CELLS PLANTS GENE ***EXPRESSION*** BACTERIAL IMMUNE ***SYSTEM*** TRANSCRIPTION

L4 ANSWER 20 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
IT Miscellaneous Descriptors
REVIEW ***MAMMALS*** EXPERIMENTAL ***SYSTEMS*** CLONING ***EXPRESSION***

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	45.31	45.52

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SESSION RESUMED IN FILE 'BIOSIS' AT 12:41:28 ON 24 MAR 2004
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FULL ESTIMATED COST	46.16	46.37

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FILE 'BIOSIS' ENTERED AT 12:35:33 ON 24 MAR 2004
L1 20 S (MAMMAL? (3A) EXPRESS? (3A) SYSTEM?) AND REVIEW
L2 0 S L1 AND LEUKEMIA
L3 0 S L1 AND PP14
L4 20 DUP REM L1 (0 DUPLICATES REMOVED)

=> d l4 bib ab 6, 8, 15

L4 ANSWER 6 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN 2002:434078 BIOSIS
DN PREV200200434078
TI Expression of factor VIII in recombinant and transgenic systems.
AU Soukharev, Serguei; Hammond, David; Ananyeva, Natalya M.; Anderson, Julia A. M.; Hauser, Charlotte A. E.; Pipe, Steven; Saenko, Evgueni L. [Reprint author]
CS Department of Biochemistry, Holland Laboratory, American Red Cross, 15601 Crabbs Branch Way, Rockville, MD, 20855, USA
SO Blood Cells Molecules and Diseases, (March-April, 2002) Vol. 28, No. 2, pp. 234-248. print.
ISSN: 1079-9796.
DT Article
General Review; (Literature Review)
LA English
ED Entered STN: 14 Aug 2002
Last Updated on STN: 14 Aug 2002
AB Deficiency in a coagulation factor VIII (FVIII) causes a genetic disorder hemophilia A, which is treated by repeated infusions of expensive FVIII products. Recombinant FVIII (rFVIII), the culmination of years of extensive international research, is an important alternative to plasma-derived FVIII (pdFVIII) and is considered to have a higher margin of safety. Advances in biotechnology allowed production of rFVIII at industrial scale, which significantly improved treatment of hemophilia A patients. We ***review*** the contemporary methods used for FVIII ***expression*** in ***mammalian*** cell culture ***systems*** and discuss the factors responsible for insufficient recoveries of rFVIII, such as inefficient accumulation of FVIII mRNA in the cell, complexity of the mechanisms of FVIII secretion, and instability of secreted FVIII. The approaches to improve the yield of rFVIII in cell culture systems include genetic engineering of B-domain-deleted FVIII, introduction of introns into FVIII cDNA constructs for more efficient processing and accumulation of FVIII mRNA, and introduction of mutations into chaperone-binding sites of FVIII to improve its secretion. Design of FVIII with prolonged half-life in vivo is considered as another promising direction in improving rFVIII protein and efficiency of hemophilia A therapy. As an alternative to expression of rFVIII in cell culture systems, we discuss production of rFVIII in transgenic animals, where high levels of rFVIII have been successfully secreted into milk. We also pay attention to the major limitations of this approach, such as safety issues associated with potential transmission of animal pathogens. Finally, we present a brief characterization of commercial recombinant FVIII products currently available on the market for hemophilia A treatment.

L4 ANSWER 8 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN 2001:334987 BIOSIS
DN PREV200100334987
TI Expression systems for production of heterologous proteins.
AU Rai, Meena; Padh, Harish [Reprint author]
CS B. V. Patel Pharmaceutical Education and Research Development Centre, Thaltej-Gandhinagar Highway, Thaltej, Ahmedabad, 380 054, India
perd@wilnetonline.net
SO Current Science (Bangalore), (10 May, 2001) Vol. 80, No. 9, pp. 1121-1128. print.
CODEN: CUSCAM. ISSN: 0011-3891.
DT Article
General Review; (Literature Review)
LA English
ED Entered STN: 18 Jul 2001
Last Updated on STN: 19 Feb 2002
AB With the advent of our ability to clone and express a foreign gene in the heterologous host, came a remarkable capability to make almost any protein in abundant quantity to be used as therapeutic or diagnostic agents. It quickly led to the realization that proteins made in different hosts are different in many ways, particularly in their post-translation modifications. In this ***review*** a variety of available expression host systems are evaluated for heterologous production of proteins. Factors affecting the stability and expression of heterologous genes are also discussed. Eventual objective of producing a desired protein in an economical heterologous host is influenced by a variety of factors discussed in this ***review*** . Subsequent to the production, stabilization and formulation of proteins will pose significant hurdles in utilizing the natural biological catalysts and other proteins for therapeutic and industrial purposes.

L4 ANSWER 15 OF 20 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN 1998:472871 BIOSIS
DN PREV199800472871
TI Antibody engineering: Comparison of bacterial, yeast, insect and ***mammalian*** ***expression*** ***systems*** .
AU Verma, R.; Boleti, E.; George, A. J. T. [Reprint author]
CS Dep. Immunol., Div. Med., Imperial Coll. Sch. Med., Hammersmith Hospital, Du Cane Road, London W12 0NN, UK
SO Journal of Immunological Methods, (July 1, 1998) Vol. 216, No. 1-2, pp. 165-181. print.
CODEN: JIMMBG. ISSN: 0022-1759.
DT Article
General Review; (Literature Review)
LA English
ED Entered STN: 5 Nov 1998
Last Updated on STN: 5 Nov 1998

AB Engineered antibody molecules, and their fragments, are being increasingly exploited as scientific and clinical tools. However, one factor that can limit the applicability of this technology is the ability to express large amounts of active protein. In this ***review*** we describe the relative advantages and disadvantages of bacterial, yeast, insect and ***mammalian*** ***expression*** ***systems*** , and discuss some of the problems that can be encountered when using them. There is no 'universal' expression system, that can guarantee high yields of recombinant product, as every antibody-based molecule will pose its own problems in terms of expression. As a result the choice of system will depend on many factors, including the molecular species being expressed, the precise sequence of the individual antibody and the preferences of the individual investigator. However, there are general rules with regards to the design of expression vectors and systems which will help the investigator to make informed choices as to which strategy might be appropriate for their application.

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FULL ESTIMATED COST	53.31	53.52

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